

## THE CITY'S WATER SUPPLY.

PRESSING NEED OF A NEW AQUEDUCT.  
TALK WITH CONTROLLER CAMPBELL ABOUT LEGISLATIVE ACTION—REPORTS FROM THE ENGINEERS OF THE DEPARTMENT OF CITY WORKS.

The subject of a new aqueduct has been discussed every year for the last ten years. Controller Campbell, while Commissioner of Public Works, gave the matter his attention. Last year a bill was introduced in the Assembly to appoint a commission to take the whole subject of the water supply under consideration, and make a report to the Legislature. Mr. Campbell showed to the satisfaction of a majority of the Assembly at that time, that such a bill would only serve to add to the expense of the city without accomplishing any good, as the work belonged to the Department of Public Works, and could best be done by its engineers, who have thoroughly studied the subject. This year another bill to the same effect has been offered, and has passed through one or more stages in the Assembly. A reporter of *The Tribune* called on Controller Campbell yesterday to ask his opinion of this bill and the matters it contains. "The bill is well written," said the Controller, "but which the Commission is to perform far better done by the Department of Public Works without expense to the city. I am strongly opposed to these Commissions."

"Do you think a new aqueduct is needed?"

"It will be, sooner or later. Had I remained in the Department, I would work this year I should have had time for a new aqueduct made, made and rates prepared, and would then have written a very full report on the subject. With such data I would have gone to the Legislature next year and asked for the necessary legislation. I advised Mr. Thompson to follow that course, but he thinks it may be best to get the legislature at once."

"You think, then, an aqueduct should be begun now?"

"One year or two will not make a great difference, but one will soon have to be built. I thought that by the suppression of waste by the use of water meters, which I had placed in factories, hotels and other places other than dwelling houses, and the additional supply from the Hudson and Raritan Rivers, for which works are now being constructed, the city could get along with a new aqueduct for eight or nine years. But it will take at least seven years to build the aqueduct, therefore the work cannot be put off many years more."

"How much would it cost?"

"That I cannot say in the absence of surveys and other data. When General T. J. Williams, Commissioner of Public Works, made some preliminary surveys and estimated the cost of a new aqueduct at \$10,000,000, the land would have to be acquired, towards making and various things done for which proper estimates should be made. Then the aqueduct could only be made useful by additional storage reservoirs. Five or six of those should be built, and they would cost in the neighborhood of half a million dollars each, so we need not be more than two built, beginning with, as others could be erected afterwards. An aqueduct should be built fifty per cent larger than the present one to meet the demands of the rapid growth of the city. It would have to be done by the issue of bonds. The Public Works Department can now expend a million dollars a year for ten years in increasing the water supply, so before there is no need of a new aqueduct for surveys and estimates to be made when the work of building a new aqueduct is begun it will be necessary to spend two or three million dollars a year; hence the necessity of more legislation."

### THE CHIEF ENGINEER'S REPORT.

Commissioner Thompson has had a report on the subject made to him by Isaac Newton, the new Chief Engineer of the Department of Public Works. The report urges the necessity of a new aqueduct at once. Following is the substance of Chief Engineer Newton's report, as made yesterday:

The original report of the Croton Aqueduct, which indicates that the maximum depth of water intended to be carried was 9 inches above the bedrock, has been superseded and corrected. The work is reported to have estimated the full capacity of the conduit at 60,000,000 gallons per day; and assuming, on the experience of other large cities with similar aqueducts, for obtaining water, that forty-eight hours, or even an inhabitant would require, this would suffice for a population of 2,000,000. To deliver this quantity of water the aqueduct need only be filled to the spring line of the arch, a gage at the sketch showing that the line of the man-made conduit will show that the line the power to resist pressure from the inside is greatly diminished."

Subsequent experience with this city, as well as with all others, which receive water under a constant head, in the United States, has shown that this rate of supply is far from being sufficient to meet the imperative demands of the population. The minimum capacity of the aqueduct has been variously stated, in different reports, at 40,000,000 and 115,000,000 of gallons daily. There is not sufficient data at hand to make any safe estimate with regard to the requirements of New York.

With the information available, it is estimated that the aqueduct, as it stands, will have a capacity of 5,000,000 or 6,000,000. For the present the maximum safe capacity will, therefore, be taken as 65,000,000 per day, and the records of the department show that this rate has been maintained for several years.

At that time, when the flow as estimated was forced upwards of 103,000,000, the consequences were disastrous, for this rate caused serious damage to the aqueduct, and it was therefore decided to limit the discharge of water to 60,000,000. The average daily delivery was at least 12,700,535 cubic feet, or 95,000,000 of gallons daily. In view of the proposed increase the estimated capacity of the aqueduct will be 100,000,000. For the present the maximum safe capacity will, therefore, be taken as 65,000,000 per day, and the records of the department show that this rate has been maintained for several years.

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